

Recent Technology for Remote Medical Education

Kuriko Kudo

Research Assistant Professor, Engineer
Telemedicine Development Center of Asia (TEMDEC)

Today's talk

- **VC (Videoconferencing) Trend**
- **Technical Tips**
- **TEMDEC Programs for Engineers**

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- **TEMDEC Programs for Engineers**

Which System is the Best
for Medical Conference?

High-Quality

User-Friendly

Multi-Functions

Low-Cost

There's no Perfect System

The Best System Depends on the Case

Contents

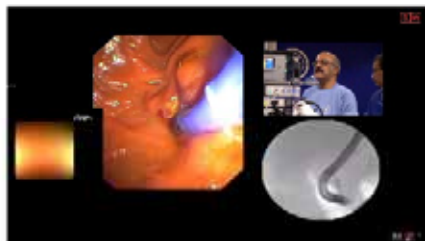
Only Discussion



Presentation



Live Surgery



Environment in All Hospitals

Academic NW
Exclusive Hardware
Big Conference
Room

Hospital A



Hospital B



Low-Bandwidth
No Static IP
Laptop Only

You can find the way to interact!

Teleconference Systems in TEMDEC

~2010s

DVTS

- Low compression
- High bandwidth



Free software developed by WIDE project since 1998

H.323

- Popular
- Expensive



Manufactured by Polycom, Lifesize, Sony, etc

Easier, cheaper, and more convenient!

Vidyo



Multipoint teleconference system conformable to H.264

- Low bandwidth
- Low cost
- Easy to connect



Cloud-based multipoint teleconference software available on multi-device

Zoom



HD-H.323(2010-)

- **Network**

Connection with Static IP

- **Bandwidth**

10Mbps or less

- **Equipment**

- **Software**

for PC, Mobile or Tablet

- **Exclusive Hardware**

Manufactured by Polycom, Sony, Lifesize, etc...

There's compatibility between manufacturers



- Popular

- Expensive

Manufactured by Polycom, Lifesize, Sony, etc

H.323 point to point

Point A



Global IP: xxx.xxx.xxx.xxx

LAN

Internet

LAN

Point B



Global IP: xxx.xxx.xxx.xxx

H.323 multi point

Point B

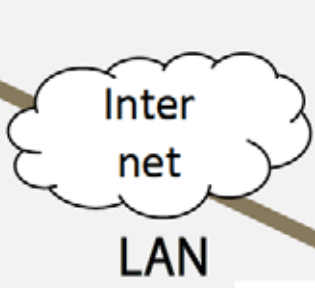
Point A

Point C

IP: xxx.xxx.xxx.xxx

IP: xxx.xxx.xxx.xxx

IP: xxx.xxx.xxx.xxx



133.5.???.???

Vidyo

- Network
DHCP or Global IP
- Bandwidth
Few Mbps
- Equipment
 - Exclusive Hardware- VidyoRoom
 - Software
for PC, Mobile or Tablet



Vidyo®

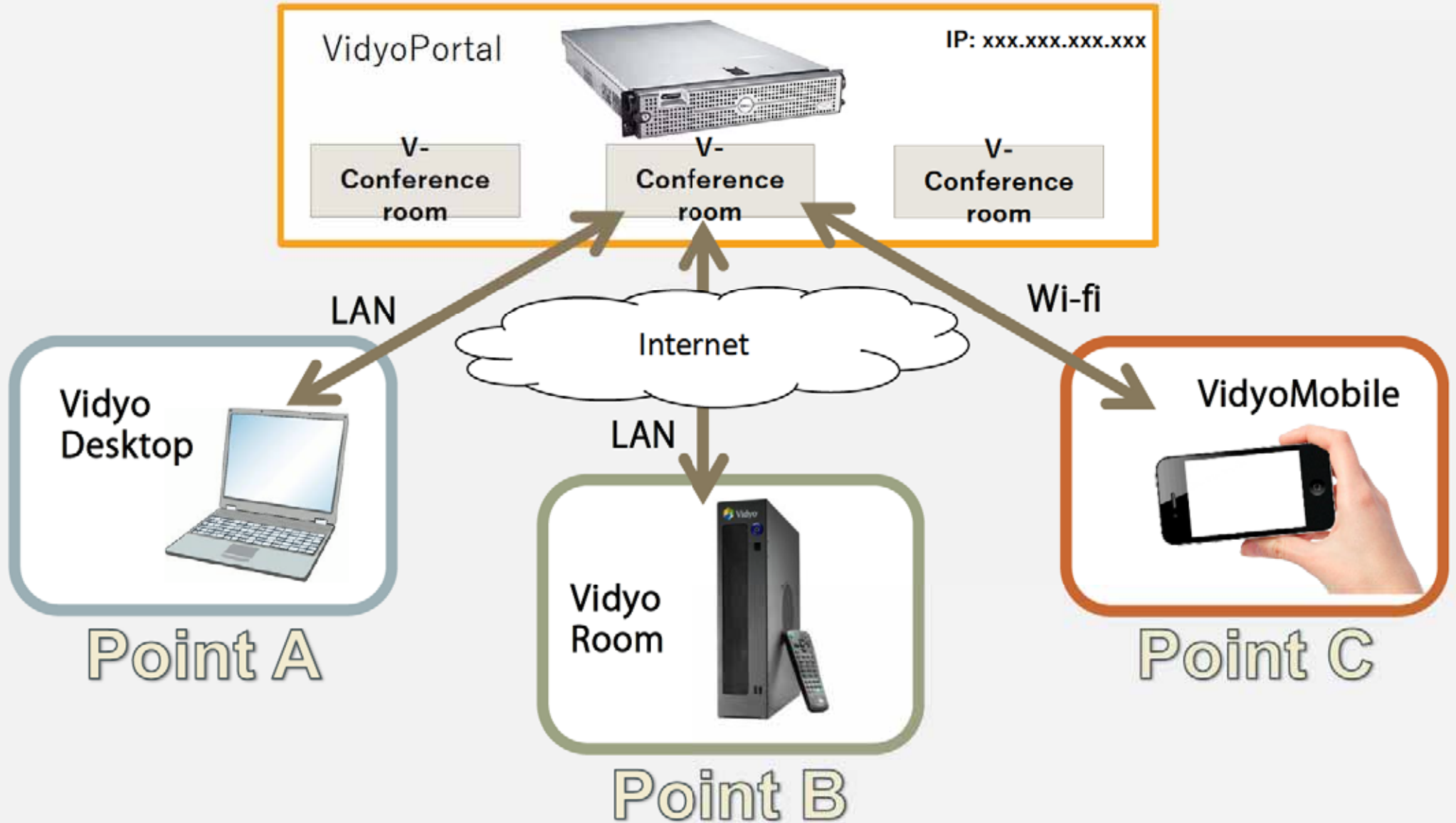


Vidyo Room



Vidyo Desktop

Vidyo Connection



Zoom

- Network
Normal internet

*Cloud-based multipoint teleconference
software available on multi-device*



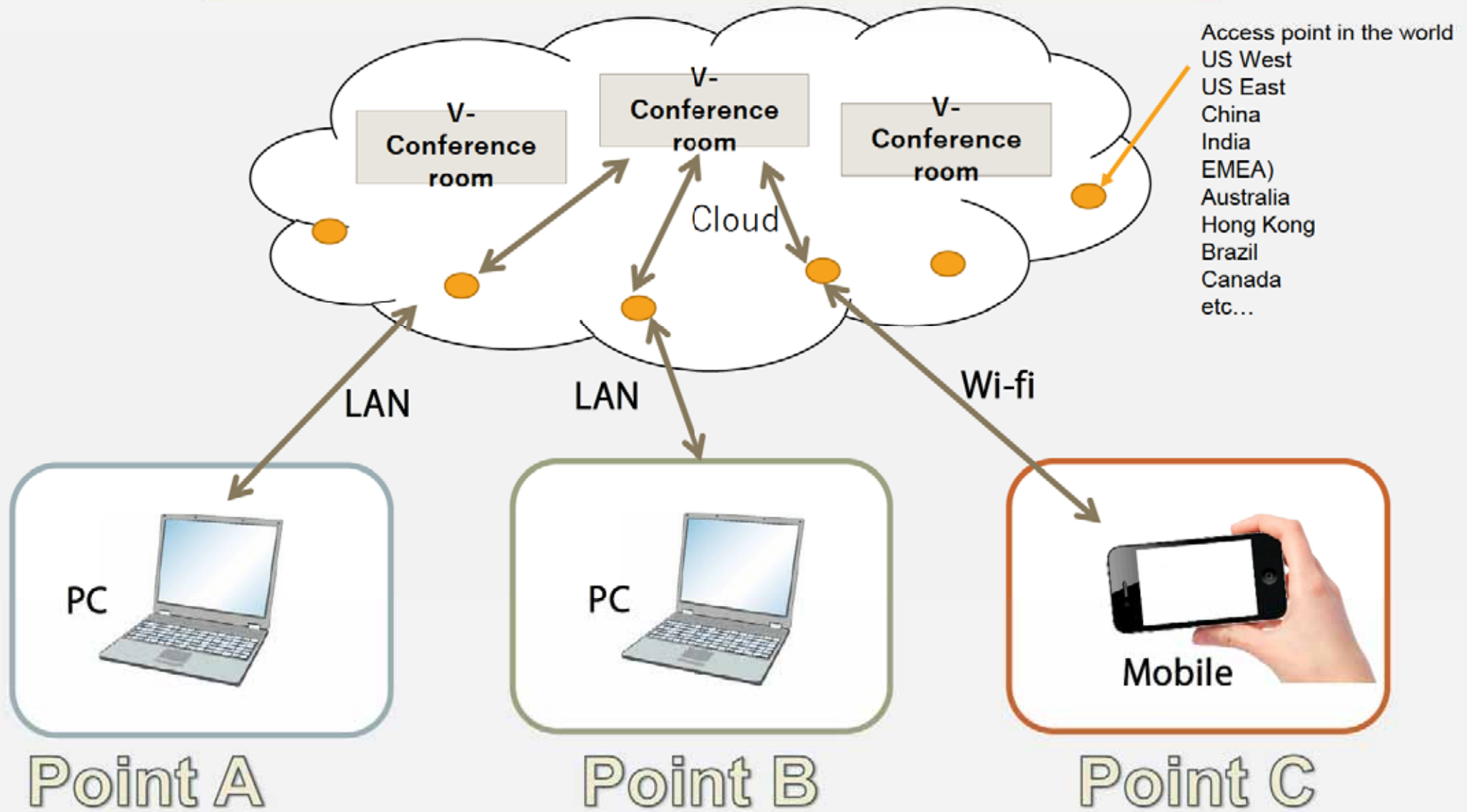
- Bandwidth
Few Mbps

- Equipment

- Software
for PC, Mobile or Tablet
- Exclusive Hardware- zoomrooms



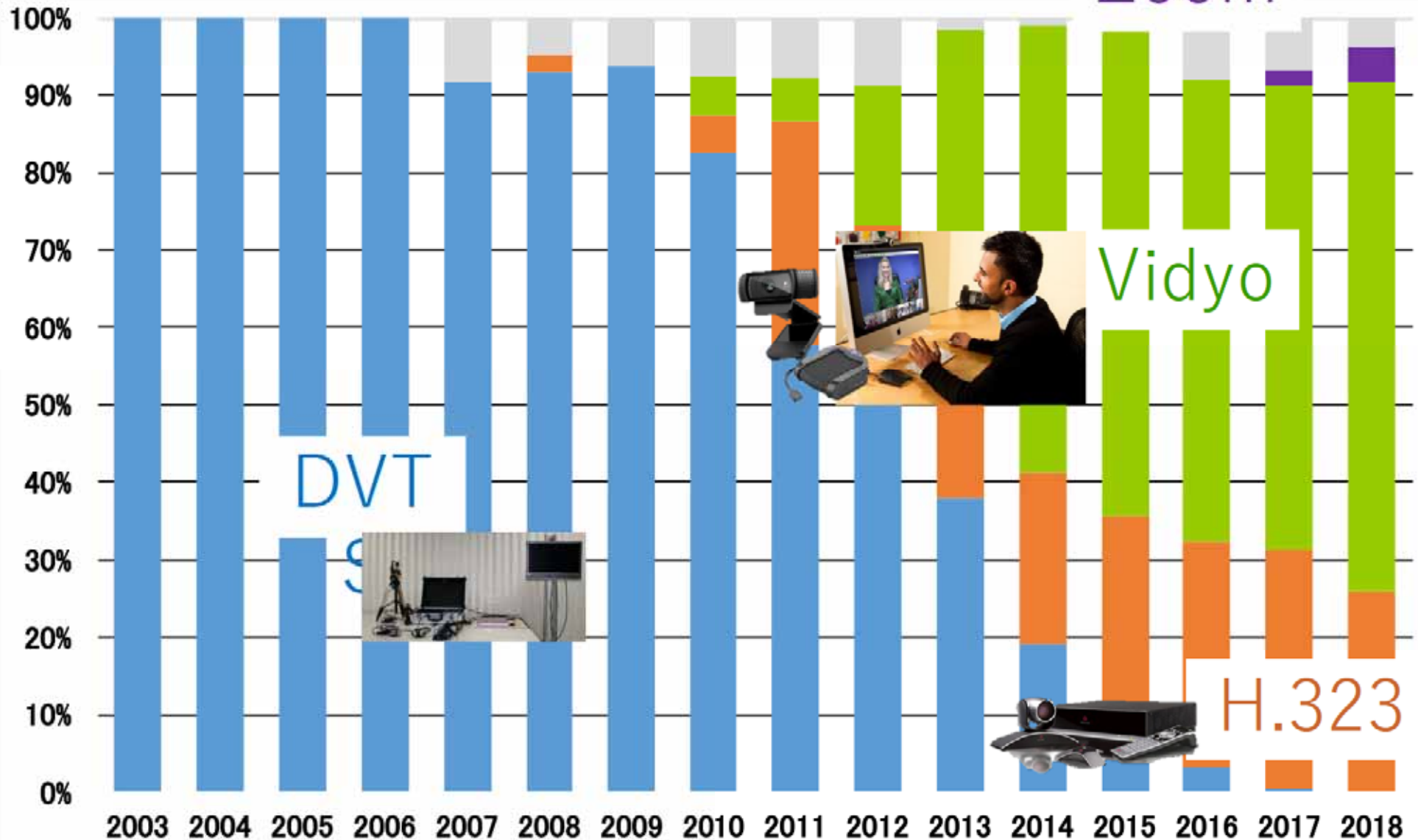
Zoom Connection



Transition of Popular VC System



Zoom



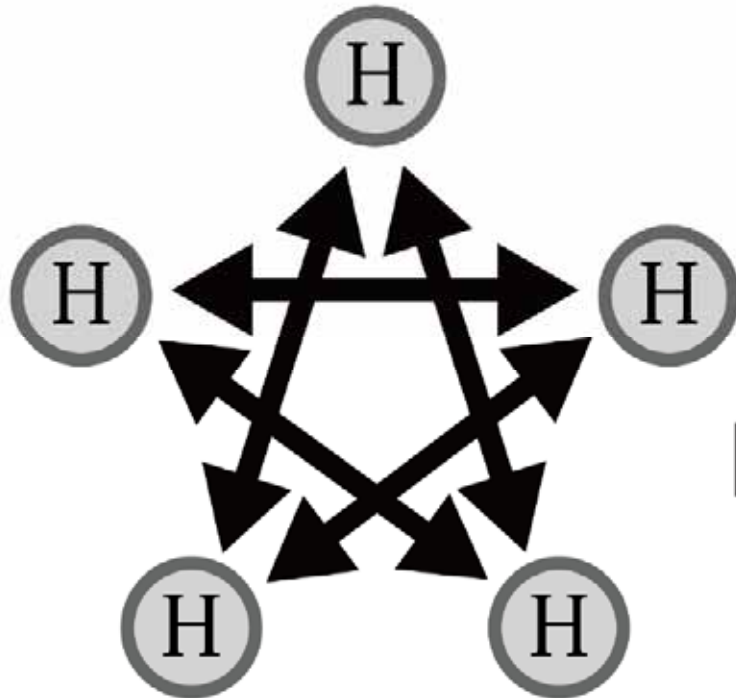
DVT

Vidyo

H.323

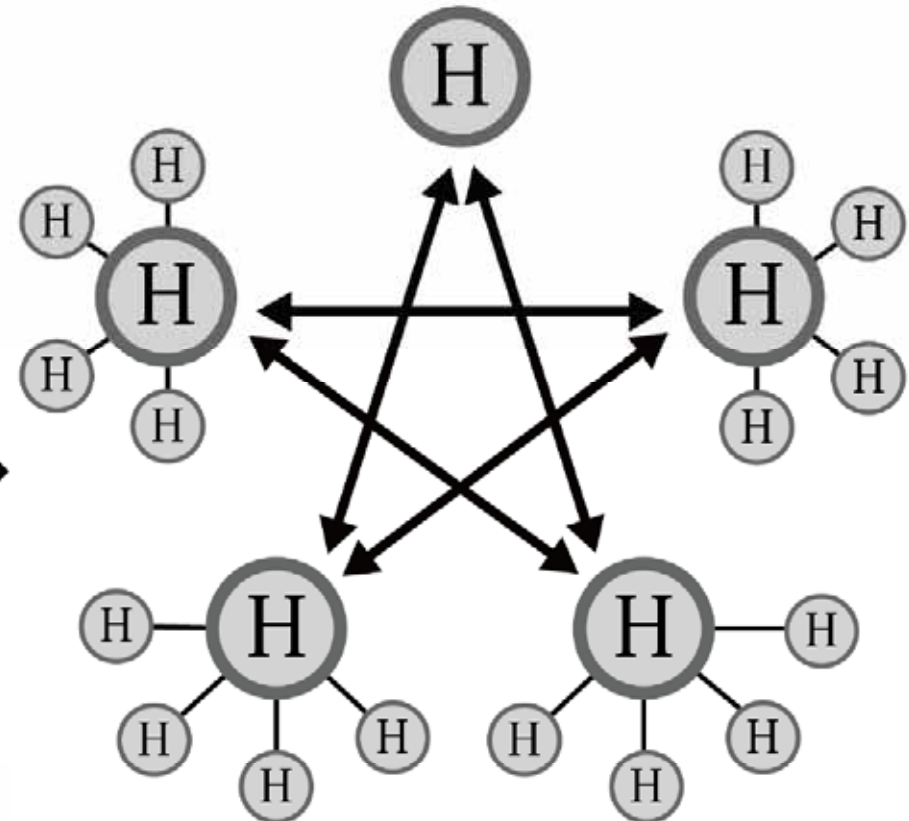
Recent Technological Change

2011



Activity majored in university hospitals
with big REN network.

2015



Activity expanded to non-university hospitals
with smaller commercial network.

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Echo problem!!!



Did you know “Mic Mute” was basic manner?



Ask doctor to off!

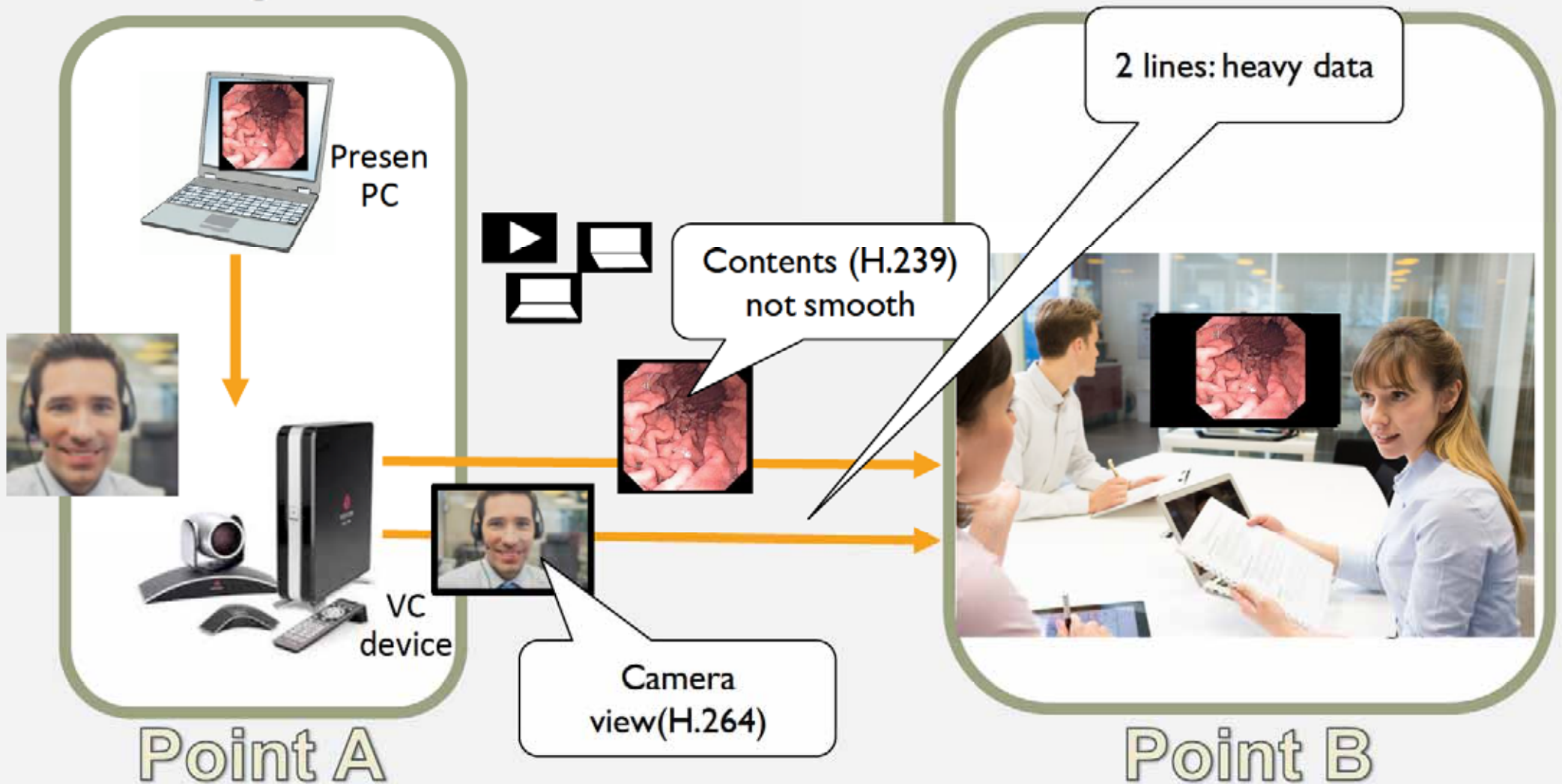


Engineer should off by VC system

Keep mute!
Always, don't forget!

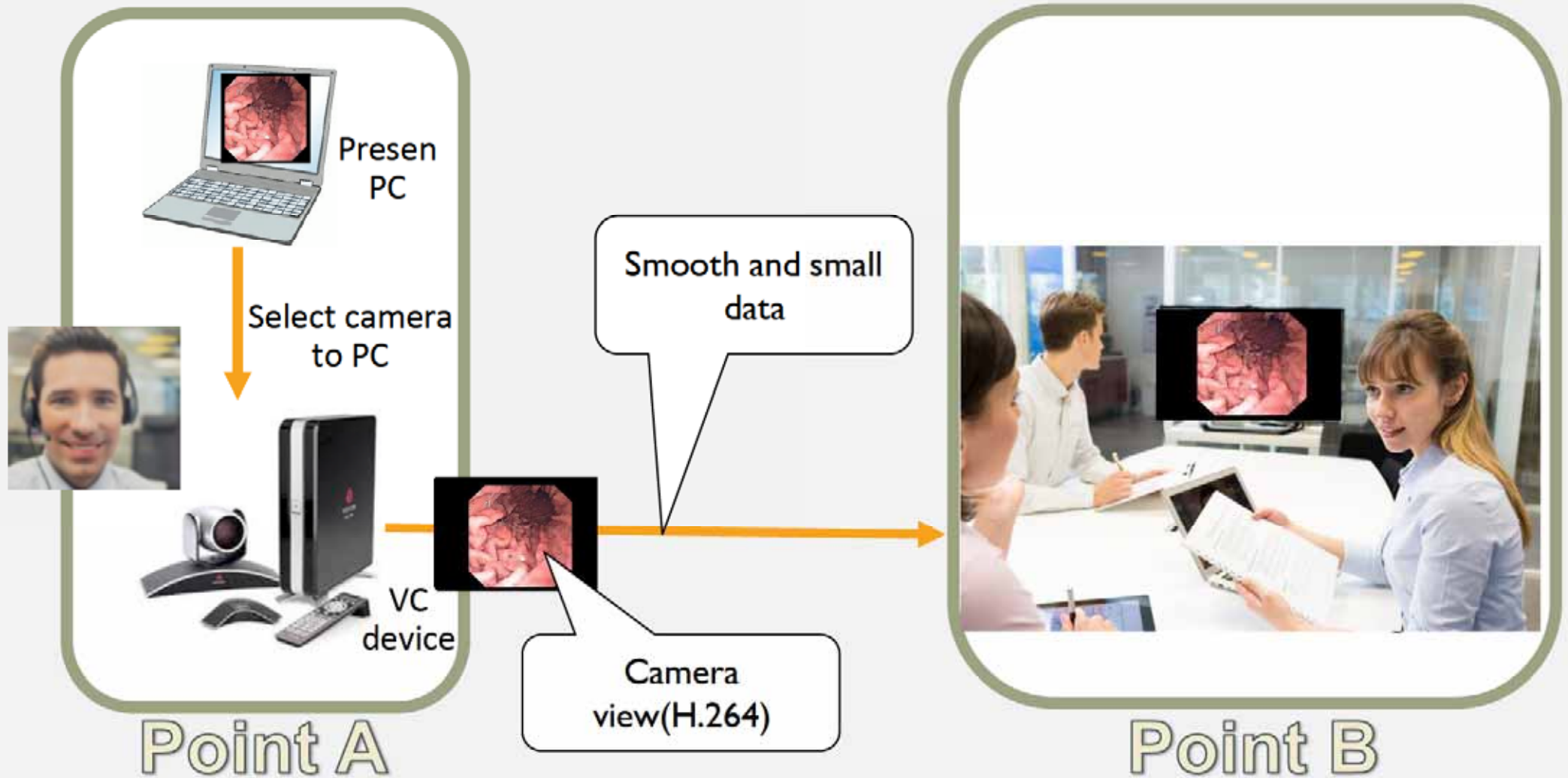
Sharing slide 1: "contents sending"

Sharing Contents

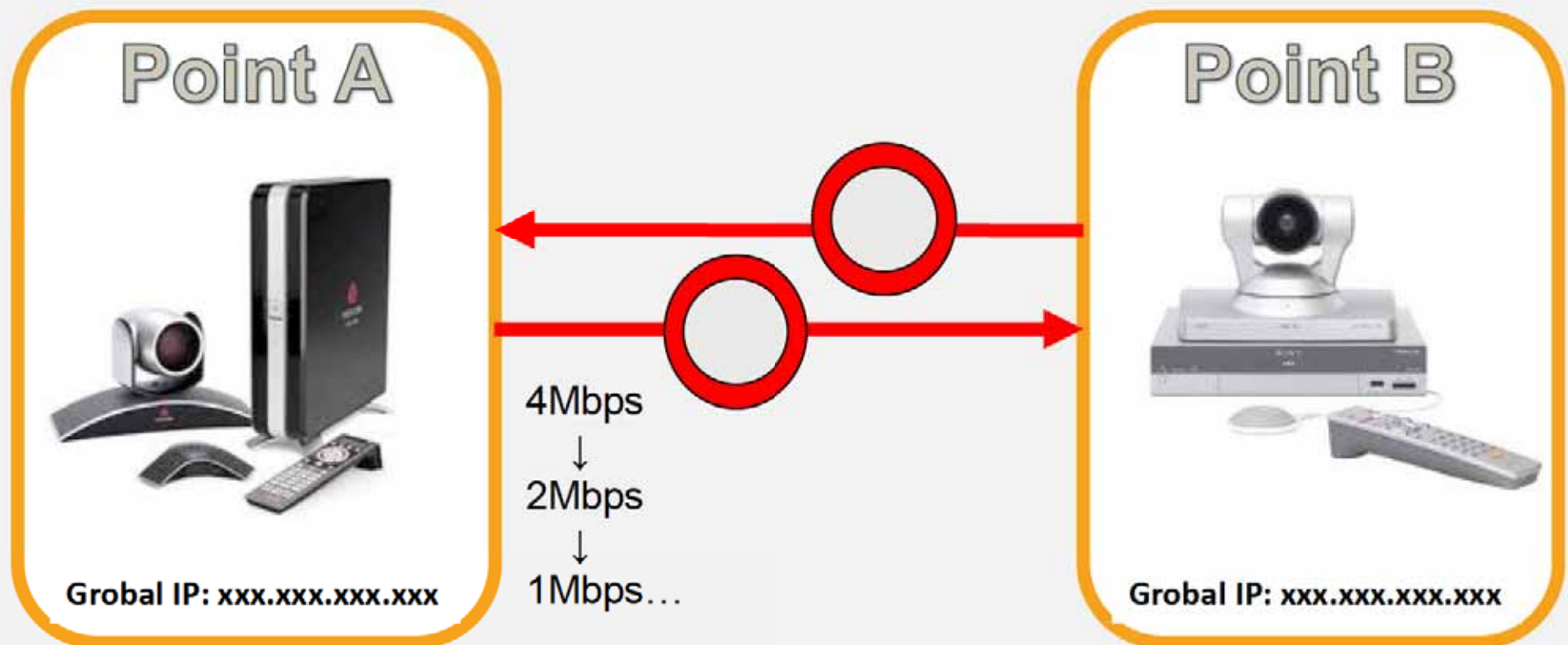


Sharing slide 2: "Changing camera input"

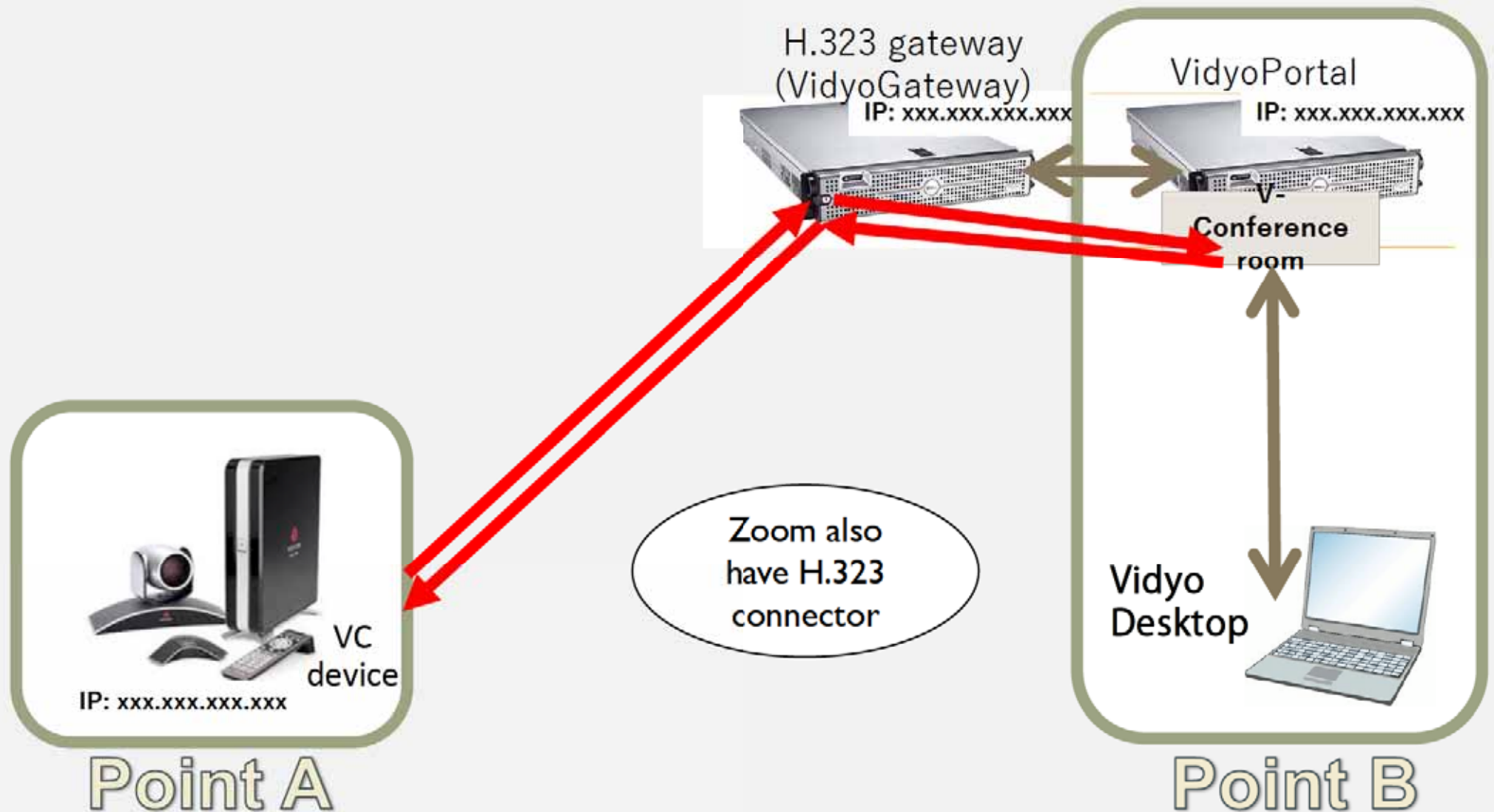
Sharing Contents



CONNECTING DIFFERENT SYSTEM: H.323



Connecting Different system: H.323 gateway



Streaming



Teleconference



See & Hear only

Receivers cannot talk with remote site



Today's talk

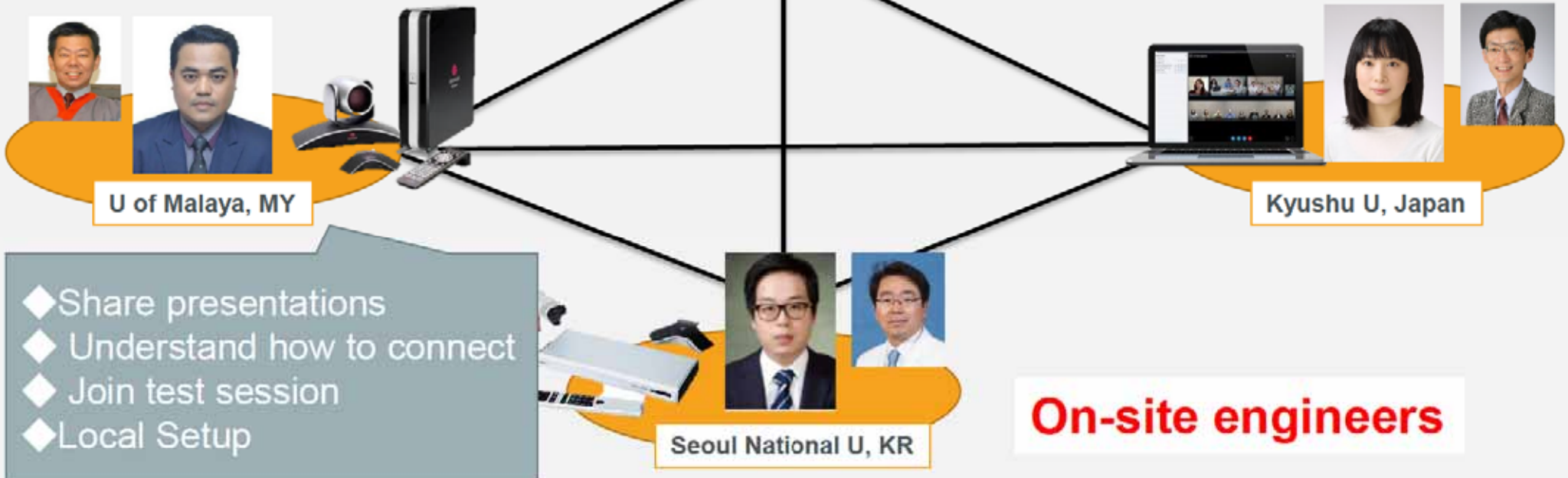
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Engineers in a Program



Chief engineer

- ◆ Contact to all local engineers
- ◆ Gather presentation file
- ◆ Decide how to connect
- ◆ Technical announcement
- ◆ Conduct test session
- ◆ Control MCU





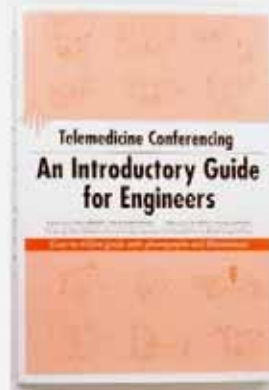
Telemedicine Engineering Training (APAN-TET)



Telemedicine Conferencing

- An Introductory Guide for Engineers

Globalization Project Team -Standing Committee
of the National University Hospital Council of Japan



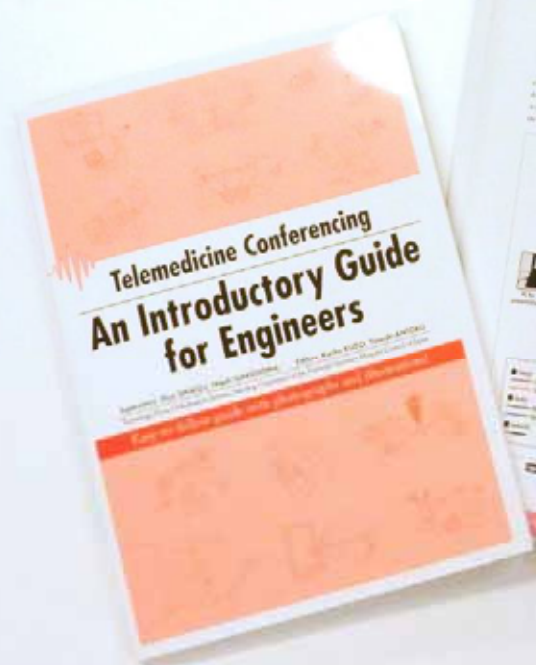
- The engineers of the institution that is connecting to the conference.
- Non-native English speakers.

Download site



Appendix!!

- Flowchart for Determining Event Type
- Checklist Depending on Event Type
- H.323 List



Lessons

- 1. You can find the way to interact.*
- 2. Well coordinating improves the quality.*
- 3. Organizing team should be very important.*

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